



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,008	04/11/2008	Dirk Muhlhoff	3081.152US01	9989

7590 08/03/2011
Douglas J Christensen
Patterson Thuent Skaar & Christensen
4800 IDS Center
80 South 8th Street
Minneapolis, MN 55402

EXAMINER

LIPITZ, JEFFREY BRIAN

ART UNIT	PAPER NUMBER
----------	--------------

3769

MAIL DATE	DELIVERY MODE
-----------	---------------

08/03/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,008	Applicant(s) MUHLHOFF ET AL.	
	Examiner JEFFREY LIPITZ	Art Unit 3769	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/25/2006 and 10/3/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because they have not been filed independently of the WIPO publication filed on January 25, 2006. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14, 20 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. What is a trigonal lattice? What is the axis of a partial lattice template? How would a skilled artisan know how to direct the laser spots? Applicant merely mentions a trigonal lattice, but does not provide illustrations or a detailed description with respect to its processing.

Art Unit: 3769

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15, 21 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 15, 21 and 26, Applicant recites the formation of an incomplete partial lattice. It is unclear what the word "incomplete" includes or excludes; and therefore, the scope of the claim is unclear. If each of the partial lattices is processed, then by definition of the word "partial" they are all incomplete relative to the final lattice pattern. If Applicant is intending for each of the partial lattice structures to have a particular pattern; and thus, the word "incomplete" indicating a failure to complete that pattern, then Applicant must define the pattern in order for the word "incomplete" to take on a definite meaning. It is unclear how a complete partial lattice and an incomplete partial lattice are distinguished from one another.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-21 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Tang (6132424).

Regarding claims 10-13, 15-19, 21 and 26, Tang teaches a laser (112; Figure 5), a scanning device (116) and a controller or computer system (118) that generates optical breakthroughs or ablation or photodisruption within the cornea (Abstract, Background and Summary of the Invention). Tang teaches ablating non-adjacent ablation points during each pass or lattice-type array (Col. 4 and Figure 3). Regarding claims 21 and 26, these claims are given negligible patentable weight, since there is no metric by which to evaluate an incomplete partial lattice, as discussed in the 112 rejections, *supra*.

Regarding claims 14 and 20, Tang teaches implementing the method of the invention by only ablating every third spot and or skipping two lines instead of one or by providing a random ordering of non-adjacent spots and or lines (Col. 5, Lines 1-11). Thus, Tang teaches using at least three partial lattices, which Examiner interprets as being any number of spots or lines per lattice.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang in view of Lin (20040039378).

Regarding claim 22, Tang does NOT discuss the time delay between adjacent spots; however, Tang teaches providing non-adjacent spots on each line followed by forming non-adjacent lines per pass. Applicant provides no guidance with respect to the time delay intended, which is an impossible metric to assess because bubble formation can be on the order of seconds. Although Applicant indicates that microseconds to seconds are possible time delays in the specification, this range is not being read into the claim. Currently, this functional limitation has minimal patentable weight.

Furthermore, attention is directed to Lin who discusses some of the challenges associated with microcavitation events or bubble formations; and acknowledges that these events also pertain to laser eye surgery (Abstract). Lin teaches that bubbles form transiently due to local heating and have lifetimes on the order of nanoseconds to microseconds (Paragraph [0015]). He also teaches that the bubbles are not stable, and can lead to cell death or damage of non-target cells (Abstract and Paragraphs [0027] and [0044]). Lin recommends using pulse repetition rates on the order of 10-5000 Hz, which he describes as fast enough to minimize the effects of eye movements and slow enough not to cause excessive heating of the tissue (Paragraph [0025]). It would have been obvious to modify Tang to include the repetition rates of Lin in order to minimize the deleterious effects of bubble formation and excessive heating, because doing so would reduce the likelihood of damaging tissue proximate to target tissue.

Regarding claims 23 and 24, these claims contain limitations that are substantially similar to those of claims 12 and 13, rejected supra.

Regarding claim 25, this claim contains limitations that are substantially similar to those of claims 14 and 20, rejected supra.

Double Patenting

Applicant is advised that should claim 15 be found allowable, claim 26 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY LIPITZ whose telephone number is (571)270-5612. The examiner can normally be reached on Monday to Thursday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Yao can be reached on (571)272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3769

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFREY B LIPITZ/
Examiner, Art Unit 3769

/Henry M. Johnson, III/
Primary Examiner, Art Unit 3769